PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-333716
(43)Date of publication of application : 04.12.2001

(51)Int.Cl. A23L 1/162
A23L 1/16

(21)Application number : 2000-160255
(22)Date of filing : 30.05.2000

(71)Applicant : YAMADAI KK
(72)Inventor : OKUBO KEIICHI

(54) METHOD FOR PRODUCING NON-FRIED NOODLE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a method for producing non-fried noodles, easily restored with boiled water, having a highly firm texture, hard to elongate with time, excellent in disaggregation and having a palate feeling closer to that of raw noodles.
SOLUTION: This method for producing non-fried noodles comprises the following steps: boiling raw noodles or dry noodles followed by making the water content gradient inside the noodle ribbons as small as possible through leaving the boiled noodles, and then washing the treated boiled noodles using a solution containing water or a noodle quality improver, followed by subjecting the washed noodles to cold-air drying at 0-40° C and a relative humidity of 10-60%.

LEGAL STATUS

[Date of request for examination]	21.11.2000
[Date of sending the examiner's decision of rejection]	
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	3440231
[Date of registration]	13.06.2003
[Number of appeal against examiner's decision of rejection]	
[Date of requesting appeal against examiner's decision of rejection]	
[Date of extinction of right]	

CLAIMS

[Claim(s)]
[Claim 1] The manufacturing method of the non fly noodles characterized by carrying out cold blast desiccation on the conditions of the temperature of 0-40 degrees C, and 10 - 60% of humidity after boil, leave noodles after boiling fresh noodles or dried noodles, making the moisture inclination inside a noodle line small as much as possible, boiling with the solution which subsequently contains water or a noodle quality improver and washing noodles.
[Claim 2] The manufacturing method of the non fly noodles according to claim 1 characterized by boiling and leaving noodles under conditions of the temperature of 0-90 degrees C, and 20 - 90% of humidity.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] About the manufacturing method of non fly noodles, in detail, molten-bath return is possible for this invention in a short time, its chewiness is strong, and its elongation is late, and it relates to the manufacturing method of the non fly noodles to which ****** has mouthfeel near good fresh noodles.
[0002]
[Description of the Prior Art] In manufacture of the conventional non fly noodles, it steams by the hot-air-drying method, and desiccation processing of noodles is performed. Although this approach is the approach of drying the noodles usually steamed with the steam around 100 degrees C by 60-100-degree C hot blast, the non fly noodles obtained are widely different with fresh noodles in mouthfeel or noodle quality at the time of eating. The reason is that the situations of formation of a paste of the quality of starch differ, and the noodle quality after desiccation differs remarkably by the case where it boils with the case where noodles are steamed in a production process. As an approach of manufacturing what has mouthfeel with the noodle quality nearest to fresh noodles, although the freeze-dry process is proposed, it is a difficulty that this approach has high manufacturing facility and manufacturing cost.
[0003]
[Problem(s) to be Solved by the Invention] The fault of the above-mentioned conventional method is canceled, molten-bath return is possible in a short time, moreover the purpose of this invention has strong chewiness, and its elongation is late, and it is offering the manufacturing method of the non fly noodles to which ******'s has mouthfeel near good fresh noodles.
[0004]
[Means for Solving the Problem] When this invention persons manufacture non fly noodles, boil, leave noodles intentionally, boil them and say that it makes the phenomenon of elongation cause. Perform processing contrary to the conventional common sense, and after an appropriate time, boil with the solution containing water or a noodle quality improver, and noodles are unfolded, washed and carried out. When cold blast desiccation was carried out immediately, degradation of noodle quality does not take place, either, but noodle lines adhere, and it finds out that the dried noodles which there is no ** and have smooth mouthfeel are obtained, and came to complete this invention. If based on the common sense of the conventional noodle making, after boiling, zero thru/or making it small, boiling and causing the phenomenon of elongation abolish the resistance to the teeth of noodles for the moisture inclination inside a noodle line, and it means losing the commodity value as noodles. However, in the approach of this invention of carrying out after cold blast desiccation of having boiled and having left noodles, the thing to depend on neglect and which you boil and is made to cause an elongation phenomenon is the important point for manufacturing the good non fly noodles of molten-bath return. The resistance to the teeth of the noodles which were boiled and were lost according to the phenomenon of elongation became clear [also restoring by desiccation processing].
[0005] After boil it and it leaves noodles, after this invention boils fresh noodles or dried noodles, it makes the moisture inclination inside a noodle line small as much as possible, boils it with the solution which subsequently contains water or a noodle quality improver and washes noodles, it relates to the manufacturing method of the non fly noodles characterized by carrying out cold blast desiccation on the conditions of the temperature of 0-40 degrees C, and 10 - 60% of humidity.
[0006]
[Embodiment of the Invention] The noodles to which this invention is applied should just be fresh noodles or dried noodles, such as **, wheat, thin wheat noodles, and spaghetti, the Chinese noodle manufactured by the conventional method, Japanese noodles, and a side. What is necessary is just to boil for about 1 - 2 minutes all over an ebullition molten bath that the process which boils fresh noodles or dried noodles should just follow a conventional method in the case of fresh Chinese-style noodles etc. The boiled noodles may wash in cold water by request, before leaving it.
[0007] It means boiling leaving the noodles boiled in this invention, and putting noodles under conditions of the temperature of 0-90 degrees C, and 20 - 90% of humidity, and means making the moisture inclination inside a noodle line small as much as possible by this. Here, it says bringing making it small as much as possible close to zero or zero. although the standard conditions in the case of leaving the boiled noodles are neglect of about 1 hour in the temperature of 25-35 degrees C, and about 80% of humidity -- a base [condition / this] -- carrying out -- low temperature -- highly humid -- neglect of long duration, and high-humidity/temperature -- short-time neglect and an elevated temperature -- what is necessary is to be damp, to be able to consider variations, such as short-time neglect, and just to determine suitable conditions in consideration of a surrounding situation etc. It washes by boiling and unfolding noodles with the solution containing water or a noodle quality improver after an appropriate time. The trade name:MENSA rat 1500, the product made from Fuso Chemistry, trade name:EMATEKKU N-100, the Riken Vitamin Co., Ltd. make, etc. are used including the component which has the operation a noodle quality improver's preventing association of noodle lines from.

[0008] Although cold blast desiccation is carried out immediately after boiling and washing noodles, the conditions at this time are [10-25 degrees C and 10 - 60% of humidity] preferably [20 - 50% of] suitable preferably the temperature of 0-40 degrees C. If cold blast desiccation is carried out under this ambient atmosphere, it boils, and molten-bath return of the noodles will be carried out for a short time, and the non fly noodles which moreover have good mouthfeel will be obtained. In this invention, it boils, and cold blast desiccation is a base and, as for desiccation processing of noodles, it is desirable to hold the temperature set up within the above-mentioned condition and humidity. Moreover, in order that noodles may prevent being polluted with saprophytic bacteria, the air in drying room or a dryer should be permuted by the air which sterilized or processed [sterilization]. Although it obtains the dried noodles which were excellent in shelf life by carrying out so that the moisture content of noodles may become about 8 - 15%, when it does not need a mothball, desiccation processing shortens the drying time suitably and its moisture content of noodles is good also as half-dried noodles to about 25%.
[0009] If cold blast desiccation of what made the moisture inclination inside a noodle line small as much as possible by leaving the boiled noodles is carried out on condition that the above, since sufficient moisture for a core exists to evaporation of the moisture from the front face of a noodle line (refer to drawing 1) (for example, about 70%), desiccation of a core becomes slow and a difference produces it in the aridity of the core of a noodle line, and a lateral part. The noodles which continued desiccation in this condition will form a crack and a cavity into a noodle line by that distortion (refer to drawing 2). Furthermore, it boils after neglect and noodles unfold, by washing, the quality of starch on the front face of noodles is flushed moderately, the adhesion of noodle lines is controlled, osmosis of the molten bath at the time of molten-bath return takes place promptly, and the obtained dried noodles come to have smooth mouthfeel near fresh noodles.
[0010] On the other hand, after washing in cold water the noodles boiled and built, it drains off water, and since the moisture inclination of the lateral part of a noodle line and a core is in a big condition when it dries by the approach immediately described above (refer to drawing 3) (a core is about 50% of moisture content at about 80% of moisture content for a lateral part), it is hard to produce a difference in both aridity also by desiccation processing. To the last, as for a core, in desiccation of a noodle line, a lateral part becomes slow early. As mentioned above, if the moisture inclination of a lateral part and a core is large (i.e., if there are few moisture contents of a core), it will be hard to produce a difference in the aridity of a lateral part and a core. As for such a noodle line, a crack and a cavity become that to which osmosis of the molten bath at the time of molten-bath return was inferior in the flavor with delay and a natural thing inside that it is fully hard to happen (refer to drawing 4).
[0011] on the other hand, by [of fresh noodles or dried noodles] boiling and making time amount longer than usual, moisture inclination was made small and made into the same condition as the left noodles — it boils and noodles are excessive — boiling — since many collapsed starches exist on the surface of a noodle line — the adhesion of noodle lines — high — desiccation processing — the shape of a nodule — becoming — also getting loose — it is bad and osmosis of the molten bath at the time of molten-bath return becomes that in which delay and a flavor are inferior.
[0012]
[Example] Below, an example explains this invention in detail.
After having made 4kg of example 1 semi- strong flour into the 100 weight sections, having added the salt 1 weight section, the **** cone powder 1 weight section, and the water 37 weight section to this, mixing and kneading, it rolled out and the noodle belt with a thickness of 1.25mm was created. This noodle belt was cut, it cut using the cutting-edge angle of No. 22, and fresh noodles were obtained. Subsequently, after having boiled these fresh noodles for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 1 hour under the ambient atmosphere of the temperature of 30 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles.
[0013] The container into which 60g of this product was put was filled with boiling water (98 degrees C) 450mL, and it covered, and after 4 minutes, the noodle line got loose, it evaluated about condition, molten-bath return, and mouthfeel, and comprehensive evaluation was performed further. In addition, by ten panelists with abundant experience, these evaluations were carried out in the following four steps, and calculated the average. A result is shown in the 1st table.
O : — very good O: — good **: — bad x: — [0014] [very bad] After having boiled the fresh noodles obtained by the same approach as example 2 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 1 hour under the ambient atmosphere of the temperature of 30 degrees C, and 80% of humidity. the constant temperature of the temperature of 20 degrees C after washing after an appropriate time by the 6 time diluted solution of a noodle quality improver (trade name: the MENSA rat 1500, product made from Fuso Chemistry), and 40% of humidity — cold blast desiccation was performed in the constant humidity interior of a room, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0015] Immediately after having boiled the fresh noodles obtained by the same approach as example of comparison 1 example 1 for 30 seconds per minute [about] all over the ebullition molten bath, it washed in cold water, and without leaving it, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0016] After having boiled the fresh noodles obtained by the same approach as example of comparison 2 example 1 for about 5 minutes all over an ebullition molten bath, it washed in cold water, cold blast desiccation was immediately performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, without leaving it, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.

[0017] After having boiled the fresh noodles obtained by the same approach as example 3 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 30 minutes under the ambient atmosphere of the temperature of 30 degrees C, and 40% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0018] After having boiled the fresh noodles obtained by the same approach as example 4 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 30 minutes under the ambient atmosphere of the temperature of 70 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0019] After having boiled the fresh noodles obtained by the same approach as example 5 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 15 minutes under the ambient atmosphere of the temperature of 70 degrees C, and 40% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0020] After having boiled the fresh noodles obtained by the same approach as example 6 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 5 hours under the ambient atmosphere of the temperature of 10 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0021]

	湯戻り	食　感	ほぐれ	総合評価
実施例1	◎	◎	◎	◎
実施例2	◎	◎	◎	◎
実施例3	◎	◎	○	◎
実施例4	◎	◎	○	◎
実施例5	◎	○	◎	◎
実施例6	◎	◎	◎	◎
比較例1	×	×	×	×
比較例2	△	△	×	△

[Table 1] ** 1 Table

[0022]
[Effect of the Invention] According to this invention, molten-bath return is possible in a short time, chewiness is strong, elongation is late, and the manufacturing method of the non fly noodles to which ****** has mouthfeel near good fresh noodles is offered.

[Translation done.]

TECHNICAL FIELD

[Field of the Invention] About the manufacturing method of non fly noodles, in detail, molten-bath return is possible for this invention in a short time, its chewiness is strong, and its elongation is late, and it relates to the manufacturing method of the non fly noodles to which ****** has mouthfeel near good fresh noodles.

[Translation done.]

PRIOR ART

[Description of the Prior Art] In manufacture of the conventional non fly noodles, it steams by the hot-air-drying method, and desiccation processing of noodles is performed. Although this approach is the approach of drying the noodles usually steamed with the steam around 100 degrees C by 60-100-degree C hot blast, the non fly noodles obtained are widely different with fresh noodles in mouthfeel or noodle quality at the time of eating. The reason is that the situations of formation of a paste of the quality of starch differ, and the noodle quality after desiccation differs remarkably by the case where it boils with the case where noodles are steamed in a production process. As an approach of manufacturing what has mouthfeel with the noodle quality nearest to fresh noodles, although the freeze-dry process is proposed, it is a difficulty that this approach has high manufacturing facility and manufacturing cost.

[Translation done.]

EFFECT OF THE INVENTION

[Effect of the Invention] According to this invention, molten-bath return is possible in a short time, chewiness is strong, elongation is late, and the manufacturing method of the non fly noodles to which ****** has mouthfeel near good fresh noodles is offered.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The fault of the above-mentioned conventional method is canceled, molten-bath return is possible in a short time, moreover the purpose of this invention has strong chewiness, and its elongation is late, and it is offering the manufacturing method of the non fly noodles to which ******'s has mouthfeel near good fresh noodles.

[Translation done.]

MEANS

[Means for Solving the Problem] When this invention persons manufacture non fly noodles, boil, leave noodles intentionally, boil them and say that it makes the phenomenon of elongation cause. Perform processing contrary to the conventional common sense, and after an appropriate time, boil with the solution containing water or a noodle quality improver, and noodles are unfolded, washed and carried out. When cold blast desiccation was carried out immediately, degradation of noodle quality does not take place, either, but noodle lines adhere, and it finds out that the dried noodles which there is no ** and have smooth mouthfeel are obtained, and came to complete this invention. If based on the common sense of the conventional noodle making, after boiling, zero thru/or making it small, boiling and causing the phenomenon of elongation abolish the resistance to the teeth of noodles for the moisture inclination inside a noodle line, and it means losing the commodity value as noodles. However, in the approach of this invention of carrying out after cold blast desiccation of having boiled and having left noodles, the thing to depend on neglect and which you boil and is made to cause an elongation phenomenon is the important point for manufacturing the good non fly noodles of molten-bath return. The resistance to the teeth of the noodles which were boiled and were lost according to the phenomenon of elongation became clear [also restoring by desiccation processing].
[0005] After boil it and it leaves noodles, after this invention boils fresh noodles or dried noodles, it makes the moisture inclination inside a noodle line small as much as possible, boils it with the solution which subsequently contains water or a noodle quality improver and washes noodles, it relates to the manufacturing method of the non fly noodles characterized by carrying out cold blast desiccation on the conditions of the temperature of 0-40 degrees C, and 10 - 60% of humidity.
[0006]
[Embodiment of the Invention] The noodles to which this invention is applied should just be fresh noodles or dried noodles, such as **, wheat, thin wheat noodles, and spaghetti, the Chinese noodle manufactured by the conventional method, Japanese noodles, and a side. What is necessary is just to boil for about 1 - 2 minutes all over an ebullition molten bath that the process which boils fresh noodles or dried noodles should just follow a conventional method in the case of fresh Chinese-style noodles etc. The boiled noodles may wash in cold water by request, before leaving it.
[0007] It means boiling leaving the noodles boiled in this invention, and putting noodles under conditions of the temperature of 0-90 degrees C, and 20 - 90% of humidity, and means making the moisture inclination inside a noodle line small as much as possible by this. Here, it says bringing making it small as much as possible close to zero or zero. although the standard conditions in the case of leaving the boiled noodles are neglect of about 1 hour in the temperature of 25-35 degrees C, and about 80% of humidity — a base [condition / this] — carrying out — low temperature — highly humid — neglect of long duration, and high-humidity/temperature — short-time neglect and an elevated temperature — what is necessary is to be damp, to be able to consider variations, such as short-time neglect, and just to determine suitable conditions in consideration of a surrounding situation etc. It washes by boiling and unfolding noodles with the solution containing water or a noodle quality improver after an appropriate time. The trade name:MENSA rat 1500, the product made from Fuso Chemistry, trade name:EMATEKKU N-100, the Riken Vitamin Co., Ltd. make, etc. are used including the component which has the operation a noodle quality improver's preventing association of noodle lines from.
[0008] Although cold blast desiccation is carried out immediately after boiling and washing noodles, the conditions at this time are [10-25 degrees C and 10 - 60% of humidity] preferably [20 - 50% of] suitable preferably the temperature of 0-40 degrees C. If cold blast desiccation is carried out under this ambient atmosphere, it boils, and molten-bath return of the noodles will be carried out for a short time, and the non fly noodles which moreover have good mouthfeel will be obtained. In this invention, it boils, and cold blast desiccation is a base and, as for desiccation processing of noodles, it is desirable to hold the temperature set up within the above-mentioned condition and humidity. Moreover, in order that noodles may prevent being polluted with saprophytic bacteria, the air in drying room or a dryer should be permuted by the air which sterilized or processed [sterilization]. Although it obtains the dried noodles which were excellent in shelf life by carrying out so that the moisture content of noodles may become about 8 - 15%, when it does not need a mothball, desiccation processing shortens the drying time suitably and its moisture content of noodles is good also as half-dried noodles to about 25%.
[0009] If cold blast desiccation of what made the moisture inclination inside a noodle line small as much as possible by leaving the boiled noodles is carried out on condition that the above, since sufficient moisture for a core exists to evaporation of the moisture from the front face of a noodle line (refer to drawing 1) (for example, about 70%), desiccation of a core becomes slow and a difference produces it in the aridity of the core of a noodle line, and a lateral part. The noodles which continued desiccation in this condition will form a crack and a cavity into a noodle line by that distortion (refer to drawing 2). Furthermore, it boils after neglect and noodles unfold, by washing, the quality of starch on the front face of noodles is flushed moderately, the adhesion of noodle lines is controlled, osmosis of the molten bath at the time of molten-bath return takes place promptly, and the obtained dried noodles come to have smooth mouthfeel near fresh noodles.

[0010] On the other hand, after washing in cold water the noodles boiled and built, it drains off water, and since the moisture inclination of the lateral part of a noodle line and a core is in a big condition when it dries by the approach immediately described above (refer to drawing 3) (a core is about 50% of moisture content at about 80% of moisture content for a lateral part), it is hard to produce a difference in both aridity also by desiccation processing. To the last, as for a core, in desiccation of a noodle line, a lateral part becomes slow early. As mentioned above, if the moisture inclination of a lateral part and a core is large (i.e., if there are few moisture contents of a core), it will be hard to produce a difference in the aridity of a lateral part and a core. As for such a noodle line, a crack and a cavity become that to which osmosis of the molten bath at the time of molten-bath return was inferior in the flavor with delay and a natural thing inside that it is fully hard to happen (refer to drawing 4).
[0011] on the other hand, by [of fresh noodles or dried noodles] boiling and making time amount longer than usual, moisture inclination was made small and made into the same condition as the left noodles — it boils and noodles are excessive — boiling — since many collapsed starches exist on the surface of a noodle line — the adhesion of noodle lines — high — desiccation processing — the shape of a nodule — becoming — also getting loose — it is bad and osmosis of the molten bath at the time of molten-bath return becomes that in which delay and a flavor are inferior.

[Translation done.]

EXAMPLE

[Example] Below, an example explains this invention in detail.
After having made 4kg of example 1 semi- strong flour into the 100 weight sections, having added the salt 1 weight section, the **** cone powder 1 weight section, and the water 37 weight section to this, mixing and kneading, it rolled out and the noodle belt with a thickness of 1.25mm was created. This noodle belt was cut, it cut using the cutting-edge angle of No. 22, and fresh noodles were obtained. Subsequently, after having boiled these fresh noodles for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 1 hour under the ambient atmosphere of the temperature of 30 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles.
[0013] The container into which 60g of this product was put was filled with boiling water (98 degrees C) 450mL, and it covered, and after 4 minutes, the noodle line got loose, it evaluated about condition, molten-bath return, and mouthfeel, and comprehensive evaluation was performed further. In addition, by ten panelists with abundant experience, these evaluations were carried out in the following four steps, and calculated the average. A result is shown in the 1st table.
O : — very good O: — good **: — bad x: — [0014] [very bad] After having boiled the fresh noodles obtained by the same approach as example 2 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 1 hour under the ambient atmosphere of the temperature of 30 degrees C, and 80% of humidity. the constant temperature of the temperature of 20 degrees C after washing after an appropriate time by the 6 time diluted solution of a noodle quality improver (trade name: the MENSA rat 1500, product made from Fuso Chemistry), and 40% of humidity — cold blast desiccation was performed in the constant humidity interior of a room, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0015] Immediately after having boiled the fresh noodles obtained by the same approach as example of comparison 1 example 1 for 30 seconds per minute [about] all over the ebullition molten bath, it washed in cold water, and without leaving it, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0016] After having boiled the fresh noodles obtained by the same approach as example of comparison 2 example 1 for about 5 minutes all over an ebullition molten bath, it washed in cold water, cold blast desiccation was immediately performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, without leaving it, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0017] After having boiled the fresh noodles obtained by the same approach as example 3 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 30 minutes under the ambient atmosphere of the temperature of 30 degrees C, and 40% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0018] After having boiled the fresh noodles obtained by the same approach as example 4 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 30 minutes under the ambient atmosphere of the temperature of 70 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0019] After having boiled the fresh noodles obtained by the same approach as example 5 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 15 minutes under the ambient atmosphere of the temperature of 70 degrees C, and 40% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1 estimated this product. A result is shown in the 1st table.
[0020] After having boiled the fresh noodles obtained by the same approach as example 6 example 1 for 30 seconds per minute [about] all over an ebullition molten bath, it washed in cold water and was left for 5 hours under the ambient atmosphere of the temperature of 10 degrees C, and 80% of humidity. After an appropriate time, it washed in cold water, cold blast desiccation was performed within the air conditioned room of the temperature of 20 degrees C, and 40% of humidity, and the moisture content manufactured about 11% of non fly noodles. The same approach as an example 1

estimated this product. A result is shown in the 1st table.

[0021]

	湯戻り	食　感	ほぐれ	総合評価
実施例1	◎	◎	◎	◎
実施例2	◎	◎	◎	◎
実施例3	◎	◎	○	◎
実施例4	◎	◎	○	◎
実施例5	◎	○	◎	◎
実施例6	◎	◎	◎	◎
比較例1	×	×	×	×
比較例2	△	△	×	△

[Table 1] ** 1 Table

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the explanatory view showing the moisture inclination of the cross section of the noodle line concerning this invention.
[Drawing 2] It is the explanatory view showing the cross section after desiccation of the noodle line concerning this invention.
[Drawing 3] It is the explanatory view showing the moisture inclination of the cross section of the noodle line when boiling and not carrying out neglect processing of the noodles.
[Drawing 4] It is the explanatory view showing the cross section after desiccation of the noodle line dried and obtained, without boiling and carrying out neglect processing of the noodles.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]

[Drawing 2]

[Drawing 3]

[Drawing 4]

[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2001－333716
（P2001－333716A）
(43)公開日　平成13年12月４日(2001.12.4)

(51)Int.Cl.'	識別記号	ＦＩ		テーマコード'（参考）
Ａ２３Ｌ　1/162		Ａ２３Ｌ　1/162		４Ｂ０４６
1/16		1/16	Ｂ	
			Ｃ	

審査請求　有　請求項の数２　ＯＬ　（全　４　頁）

(21)出願番号　特願2000－160255(P2000－160255)

(22)出願日　平成12年５月30日(2000.5.30)

(71)出願人　395009488
ヤマダイ株式会社
茨城県結城郡八千代町大字平塚4828
(72)発明者　大久保　慶一
茨城県結城郡八千代町大字平塚4828番地
ヤマダイ株式会社内
(74)代理人　100074077
弁理士　久保田　藤郎　（外１名）

Ｆターム(参考)　4B046 LA05 LB08 LC02 LC04 LC15
LP35 LP51 LP80

(54)【発明の名称】　ノンフライ麺の製造法

(57)【要約】
【課題】　短時間で湯戻り可能で、コシが強く、伸びが遅く、ほぐれが良好な、生麺に近い食感を有するノンフライ麺の製造法を提供すること。
【解決手段】　生麺または乾麺を茹でた後、茹で麺を放置して麺線内部の水分勾配を可及的に小さくし、次いで水または麺質改良剤を含む溶液で茹で麺を洗った後、温度０～４０℃、湿度１０～６０％の条件にて冷風乾燥することを特徴とするノンフライ麺の製造法。

1

【特許請求の範囲】

【請求項１】　生麺または乾麺を茹でた後、茹で麺を放置して麺線内部の水分勾配を可及的に小さくし、次いで水または麺質改良剤を含む溶液で茹で麺を洗った後、温度０～４０℃、湿度１０～６０％の条件にて冷風乾燥することを特徴とするノンフライ麺の製造法。

【請求項２】　茹で麺を、温度０～９０℃、湿度２０～９０％の条件下で放置することを特徴とする請求項１記載のノンフライ麺の製造法。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、ノンフライ麺の製造法に関し、詳しくは短時間で湯戻り可能で、コシが強く、伸びが遅く、ほぐれが良好な、生麺に近い食感を有するノンフライ麺の製造法に関する。

【０００２】

【従来の技術】従来のノンフライ麺の製造においては、熱風乾燥法によって蒸し麺の乾燥処理が行われている。この方法は、通常１００℃前後の蒸気にて蒸した麺を６０～１００℃の熱風で乾燥する方法であるが、得られるノンフライ麺は、喫食時に食感や麺質において生麺とはかけ離れている。その理由は、製造工程において、麺を蒸す場合と茹でる場合とではデンプン質の糊化の状況が異なり、乾燥後における麺質が著しく異なるからである。麺質が生麺に最も近い食感を有するものを製造する方法として、フリーズドライ製法が提案されているが、この方法は製造設備及び製造コストが高いことが難点である。

【０００３】

【発明が解決しようとする課題】本発明の目的は、上記した従来法の欠点を解消して、短時間で湯戻りが可能であり、しかもコシが強く、伸びが遅く、ほぐれが良好な、生麺に近い食感を有するノンフライ麺の製造法を提供することである。

【０００４】

【課題を解決するための手段】本発明者らは、ノンフライ麺を製造するにあたり、茹で麺を意図的に放置して茹で伸びの現象を起こさせるという、従来の常識に反する処理を行い、しかる後、水または麺質改良剤を含む溶液で茹で麺をほぐし洗いし、直ちに冷風乾燥したところ、麺質の劣化も起こらず、麺線同士のくっつきがなく、滑らかな食感を有する乾燥麺が得られることを見出して、本発明を完成するに至った。従来の製麺の常識に基づけば、茹でた後麺線内部の水分勾配をゼロないし小さくし、茹で伸びの現象を起こすということは、麺の歯ごたえを無くし、麺としての商品価値をなくすることを意味する。しかしながら、茹で麺を放置したのち冷風乾燥するという本発明の方法においては、放置による茹で伸び現象を起こさせることが、湯戻りの良いノンフライ麺を製造するための重要なポイントである。茹で伸びの現象

2

により失った麺の歯ごたえは、乾燥処理によって復元することも明らかとなった。

【０００５】本発明は、生麺または乾麺を茹でた後、茹で麺を放置して麺線内部の水分勾配を可及的に小さくし、次いで水または麺質改良剤を含む溶液で茹で麺を洗った後、温度０～４０℃、湿度１０～６０％の条件にて冷風乾燥することを特徴とするノンフライ麺の製造法に関する。

【０００６】

【発明の実施の形態】本発明が適用される麺類とは、常法により製造された中華麺、うどん、そば、ひやむぎ、そうめん、スパゲッティー等の生麺または乾麺であれば良い。生麺または乾麺を茹でる工程は、常法に従えばよく、例えば生中華麺などの場合は、沸騰湯中で１～２分間程茹でれば良い。茹でた麺は、放置する前に、所望により水洗いをしても良い。

【０００７】本発明において茹でた麺を放置するとは、茹で麺を温度０～９０℃、湿度２０～９０％の条件下で静置することを意味し、これにより麺線内部の水分勾配を可及的に小さくすることを意味する。ここで、可及的に小さくするとは、ゼロもしくはゼロに近づけることを言う。茹でた麺を放置する場合の標準的な条件は、温度２５～３５℃、湿度約８０％で約１時間の放置であるが、この条件を基本として低温高湿で長時間の放置、高温高湿で短時間の放置、高温低湿で短時間の放置などのバリエーションが考えられ、周囲の状況などを考慮して適切な条件を決定すればよい。しかる後、茹で麺を水または麺質改良剤を含む溶液でほぐし洗いを行う。麺質改良剤は、麺線同士の結合を防ぐ作用を有する成分を含むものであり、例えば商品名：メンサラット１５００、扶桑化学（株）製や商品名：エマテックＮ－１００、理研ビタミン（株）製などが用いられる。

【０００８】茹で麺を洗った後、直ちに冷風乾燥するが、このときの条件は、温度０～４０℃、好ましくは１０～２５℃、湿度１０～６０％、好ましくは２０～５０％が適当である。この雰囲気下で冷風乾燥すると、茹で麺は短時間で湯戻りし、しかも良好な食感を有するノンフライ麺が得られる。本発明においては、茹で麺の乾燥処理は、冷風乾燥が基本であり、上記の条件内で設定した温度や湿度を保持することが望ましい。また、麺類が雑菌によって汚染されることを防止するため、乾燥室あるいは乾燥機内の空気は殺菌もしくは滅菌処理した空気と置換しておくべきである。乾燥処理は、麺の水分含量が約８～１５％となるように行うことによって、保存性に優れた乾燥麺を得るが、長期保存を必要としない場合などには、乾燥時間を適宜短縮して麺の水分含量が約２５％程度までの半乾燥麺としても良い。

【０００９】茹でた麺を放置することによって麺線内部の水分勾配を可及的に小さくしたものを、上記の条件にて冷風乾燥すると、麺線の表面からの水分の蒸発に対し

て中心部には十分な水分が存在する（例えば、約７０％）ため（図１参照）、中心部の乾燥は遅くなり、麺線の中心部と外側部の乾燥度に差が生じる。この状態で乾燥を続けた麺は、その歪みにより麺線中に亀裂や空洞を形成することになる（図２参照）。さらに、放置後の茹で麺のほぐし洗いによって、麺表面のデンプン質が適度に洗い流され、麺線同士の付着性が抑制され、得られた乾燥麺は湯戻し時の湯の浸透が速やかに起こり、生麺に近い滑らかな食感を有するようになる。

【００１０】これに対して、茹でたての麺を水洗いした後、水切りし、直ちに前記した方法で乾燥を行うと、麺線の外側部と中心部の水分勾配が大きな状態にある（例えば、外側部が約８０％の水分含量で、中心部が約５０％の水分含量）ため（図３参照）、乾燥処理によっても両者の乾燥度に差が生じにくい。あくまでも、麺線の乾燥は、外側部が早く、中心部は遅くなる。上記のように、外側部と中心部の水分勾配が大きければ、すなわち中心部の水分含量が少なければ、外側部と中心部の乾燥度に差が生じにくい。このような麺線は内部に亀裂や空洞が十分に起こり難く（図４参照）、湯戻し時の湯の浸透が遅れ、当然のことながら、食味の劣ったものとなる。

【００１１】一方、生麺または乾麺の茹で時間を通常よりも長くすることによって水分勾配を小さくして、放置した麺と同様な状態とした茹で麺は、過度の茹でによって崩壊したデンプンが麺線の表面に多く存在しているため、麺線同士の付着性が高く、乾燥処理によって団塊状となり、ほぐれも悪く、湯戻し時の湯の浸透が遅れ、食味の劣ったものとなる。

【００１２】

【実施例】以下に、実施例によって本発明を詳しく説明する。

実施例１

準強力粉４ｋｇを１００重量部とし、これに食塩１重量部、かんすい粉１重量部及び水３７重量部を加えて混合し、混練したのち、圧延して厚さ１．２５ｍｍの麺帯を作成した。この麺帯を切り刃２２番角を用いて切断し、生麺を得た。次いで、この生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度３０℃、湿度８０％の雰囲気下で１時間放置した。しかる後、水洗いし、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って水分含量が約１１％のノンフライ麺を製造した。

【００１３】この製品６０ｇを入れた容器に熱湯（９８℃）４５０ｍＬを注いで蓋をし、４分後に麺線のほぐれ具合、湯戻り、食感について評価し、さらに総合評価を行った。なお、これらの評価は経験豊富なパネラー１０名により、以下の４段階で行い、平均値を求めた。結果を第１表に示す。

◎：非常に良い、○：良い、△：悪い、×：非常に悪い

【００１４】実施例２

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度３０℃、湿度８０％の雰囲気下で１時間放置した。しかる後、麺質改良剤（商品名：メンサラット１５００、扶桑化学（株）製）の６倍希釈溶液で洗った後、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００１５】比較例１

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、放置を行わずに直ちに、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行い水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００１６】比較例２

実施例１と同様の方法で得られた生麺を沸騰湯中で約５分間茹で上げた後、水洗いし、放置を行わずに直ちに温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行い水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００１７】実施例３

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度３０℃、湿度４０％の雰囲気下で３０分間放置した。しかる後、水洗いし、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って、水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００１８】実施例４

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度７０℃、湿度８０％の雰囲気下で３０分間放置した。しかる後、水洗いし、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って、水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００１９】実施例５

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度７０℃、湿度４０％の雰囲気下で１５分間放置した。しかる後、水洗いし、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って、水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００２０】実施例６

実施例１と同様の方法で得られた生麺を沸騰湯中で約１分３０秒間茹で上げた後、水洗いし、温度１０℃、湿度８０％の雰囲気下で５時間放置した。しかる後、水洗い

し、温度２０℃、湿度４０％の恒温恒湿室内で冷風乾燥を行って、水分含量が約１１％のノンフライ麺を製造した。この製品について、実施例１と同様の方法で評価した。結果を第１表に示す。

【００２１】

【表１】第　１　表

	湯戻り	食　感	ほぐれ	総合評価
実施例１	◎	◎	◎	◎
実施例２	◎	◎	◎	◎
実施例３	◎	◎	○	◎
実施例４	◎	◎	○	◎
実施例５	◎	○	◎	◎
実施例６	◎	◎	◎	◎
比較例１	×	×	×	×
比較例２	△	△	×	△

＊【００２２】

【発明の効果】本発明によれば、短時間で湯戻り可能で、コシが強く、伸びが遅く、ほぐれが良好な、生麺に近い食感を有するノンフライ麺の製造法が提供される。

【図面の簡単な説明】

【図１】　本発明に係る麺線の断面の水分勾配を示す説明図である。

【図２】　本発明に係る麺線の乾燥後の断面を示す説明図である。

【図３】　茹で麺を放置処理しない場合の麺線の断面の水分勾配を示す説明図である。

【図４】　茹で麺を放置処理せずに乾燥して得た麺線の乾燥後の断面を示す説明図である。

＊

【図１】

【図２】

【図３】

【図４】